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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Contract No. 68-01-6769
Work Assignment No. 86-058

**PRIVILEGED WORK PRODUCT PREPARED
IN ANTICIPATION OF LITIGATION**

RCRA PRELIMINARY ASSESSMENT/SITE INVESTIGATION PLAN
RAYMARK INDUSTRIES, INCORPORATED
Manheim, Pennsylvania 17545
PA D003015328

Draft Final Report

June 1986

**ENFORCEMENT
CONFIDENTIAL**

Prepared by

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GCA TECHNOLOGY DIVISION, INCORPORATED
Bedford, Massachusetts 01730

DISCLAIMER

This Draft Final Report was furnished to the Environmental Protection Agency by the GCA Corporation, GCA Technology Division, Inc., Bedford, Massachusetts 01730, in partial fulfillment of Contract No. 68-01-6769, Work Assignment No. 86-058. The opinions, findings, and conclusions expressed are those of the authors and not necessarily those of the Environmental Protection Agency or the cooperating agencies. Mention of company or product names is not to be considered as an endorsement by the Environmental Protection Agency.

INTRODUCTION

GCA Technology Division, Incorporated (GCA) has prepared this RCRA Preliminary Assessment/Site Investigation Plan (PA/SI Plan) of Raymark Industries, Incorporated in accordance with draft RCRA Preliminary Assessment/Site Investigation Guidance as issued by the Permits and State Programs Division of the EPA Office of Solid Waste (OSW) on August 5, 1985, and the Work Plan for TES I Work Assignment No. 86-058.

The information presented in this report was compiled by GCA during a Preliminary Review (PR) of EPA Region III and Pennsylvania Department of Environmental Resources regulatory files in March 1986, and supplemented with additional information obtained via a Visual Site Inspection (VSI) of the Raymark facility conducted on May 7, 1986 in conjunction with EPA Region III personnel and Raymark officials.

GCA found it necessary to obtain information on population density and meteorological conditions in the vicinity of the site from EPA's Office of Toxic Substance Exposure Evaluation Division in order to meet the national PA guidance requirements.

GCA recommends that the third stage of the RCRA facility assessment, the Sampling Visit (SV), be considered for Raymark. Requests for owner/operator submittal of additional information are recommended; the need for the SV should be determined subsequent to review of the information provided. Recommendations for remedial investigation and other further actions presented in Table 3 of this Report should be finalized after the additional information is reviewed and the SV (if necessary) is completed.

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SECTION 1

GENERAL INFORMATION ^{1,2}

Site Name: Raymark Industries, Incorporated

I.D. Number: PA D003015328

Location: 123 East Stiegal Street
Lancaster County
Manheim, Pennsylvania 17545

Latitude: 40 degrees 09 minutes 19 seconds

Longitude: 76 degrees 23 minutes 07 seconds

Facility Contact: Dennis A. Weller - Manager, Facilities Engineering

Phone Number: 717/665-2211

Mail Address: 123 East Stiegal Street
Manheim, Pennsylvania 17545

Owner/Operator: Raymark Corporation
100 Oakview Drive
Trumbull, Connecticut 06611

SECTION 2

FACILITY DESCRIPTION

Raymark Industries, Incorporated (Raymark), formerly known as Raybestos-Manhattan, Incorporated, is a manufacturing facility located along Chickies Creek just east of Manheim Borough in Lancaster County, Pennsylvania (Figure 1). The site lies at an elevation of approximately 400 feet above mean sea level and is surrounded by residential property to the west, northwest and southwest, and by undeveloped/agricultural land to the east, northeast and southeast.

Raymark manufactures a range of asbestos-based, energy absorbing friction materials, primarily for use in the automotive industry. Raymark's products include clutch facings, brake linings, oil-well linings, and asbestos-reinforced plastics.³ In 1981, Raymark received interim status approval to store hazardous wastes in containers (S01) and dispose of hazardous wastes in a landfill.⁴ According to their RCRA Part A Application⁵ of November 19, 1980, Raymark produces the following hazardous wastes:

<u>Waste Code</u>	<u>Description</u>	<u>Estimated Annual Quantity</u>
F001	Spent halogenated solvents (degreasing)	10,000 pounds
F003	Spent non-halogenated solvents	1,200 pounds
F005	Spent non-halogenated solvents	1,750 pounds
D001	Ignitable wastes	81,000 pounds
D008	Lead	9,663 tons

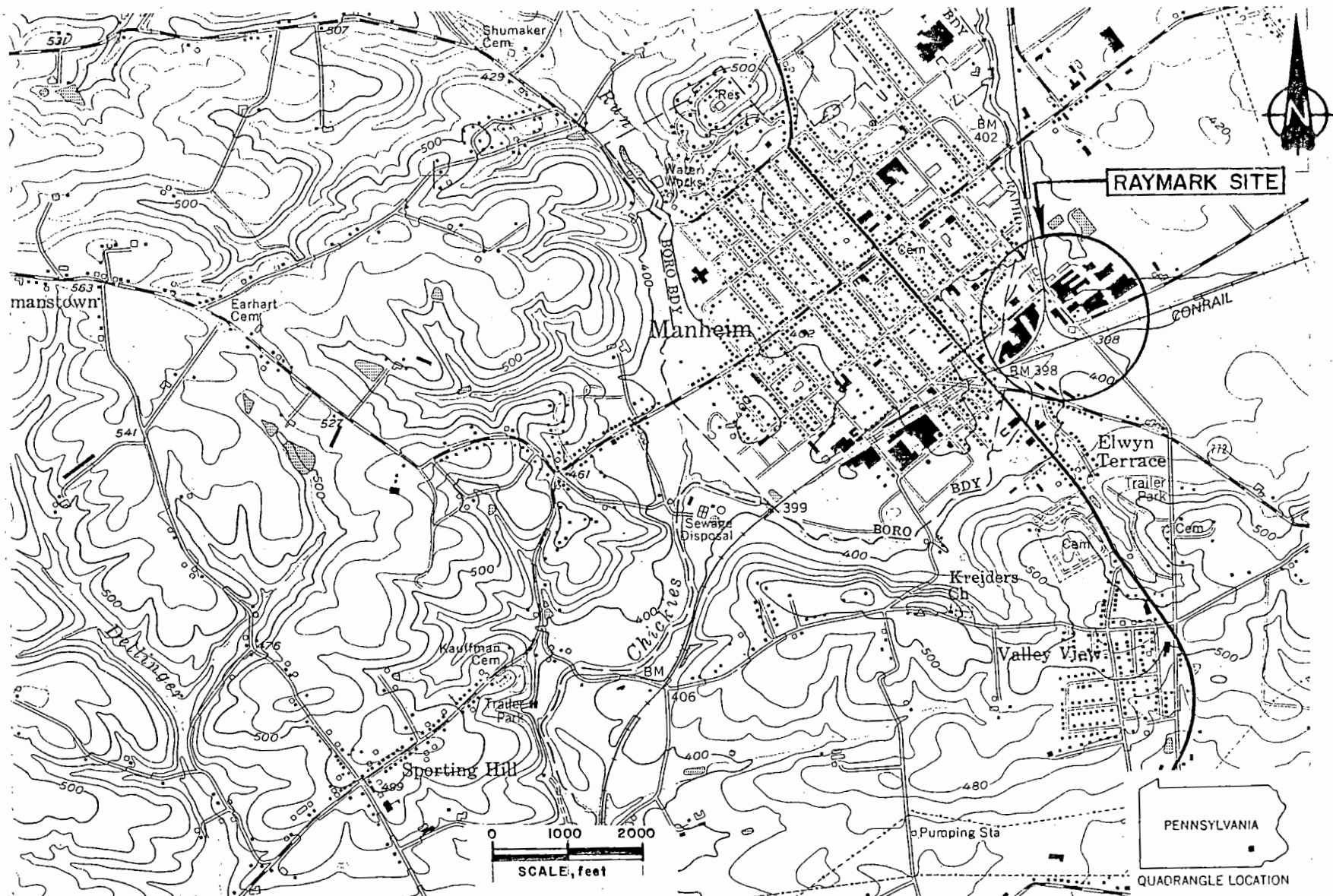


Figure 1. U.S.G.S. topographic map of Raymark Industries, Inc. and surrounding area.

All of the above wastes, with the exception of D008, are currently stored in drums on site for less than 90 days⁶ and shipped to offsite disposal facilities. D008 waste, which contains EP toxic concentrations of lead, and asbestos waste are landfilled on site.

SECTION 3

PERMIT HISTORY

The Raymark Industries, Incorporated permit history is presented in Table 1. The facility holds a RCRA interim status permit for hazardous waste storage and disposal. Raymark submitted a RCRA Part B Permit Application for operation of a hazardous waste landfill and storage facility to PA DER on December 8, 1983. On March 1, 1985, Raymark was notified by letter that PA DER intended to deny Raymark a Part B operating permit for the hazardous waste landfill due to deficiencies in the landfill's design, specifically citing the lack of a double liner system.⁷ In April 1985, Raymark withdrew their request for a Part B storage facility permit from PA DER, indicating that wastes would no longer be stored on site in excess of 90 days.⁸ On July 23, 1985 Raymark withdrew their request for the RCRA Part B hazardous waste landfill operating permit from PA DER. According to Raymark, the formal issuance of a Part B Permit Application denial notice is anticipated by June 15, 1986. Following that notice, Raymark intends to submit a Closure/Post-Closure plan for the current landfill by June 30, 1986, close onsite disposal operations by March 31, 1987, and fully implement the PA DER approved Closure plan by June 31, 1987.⁹

According to EPA Region III personnel, the facility has not been investigated under CERCLA (Joseph Arena, EPA Region III, personal communication, March 14, 1986).

Raymark has submitted a Reauthorization Statutory Interpretation (RSI #3) response, dated April 18, 1985, to EPA Region III. In that response, Raymark identified an off-site rock quarry as having received hazardous

TABLE 1. RAYMARK INDUSTRIES, INC. PERMIT HISTORY

<u>RCRA/Solid Waste</u>	<u>Date</u>
RCRA Part A Application (EPA)	November 19, 1980
Notification of Interim Status for S01 and D80	August 5, 1981
RCRA Part B Permit Application (PA DER)	
Submitted	December 8, 1983
Withdrawn	July 23, 1985
RCRA Part B Permit Application (EPA)	
Submitted	February 7, 1985
Revisions	September 6, 1985

PA DER Solid Waste Permit No. 300628
(Hazardous Waste Landfill)

Water/NPDES

NPDES Permit No. PA 0008559 (expires November 5, 1987)

Permit allows Raymark to discharge non-contact cooling water, recovery system condenser cooling water, and storm water runoff through twelve permitted outfalls to Chickie's Creek.

(continued)

TABLE 1. (continued)

Air

Twenty-nine PA DER Air Quality Operating Permits.

No. 36-302-058	No. 36-318-042	No. 36-319-013
No. 36-309-004	36-319-001	" 014
" 005	" 006	" 016
" 010	" 007	" 017
" 011	" 008	" 019
" 012	" 010	" 020
" 013AA	" 010	" 022
" 032	" 011	" 023
" 049	" 012	" 024
" 062		" 026

Source: Compiled from EPA Region III and PA DER Regulatory Files,
March, 1986.

waste from the facility from 1968 to 1973. The rock quarry is included in this Report as one of the facility's Solid Waste Management Units (SWMUs) under the presumption that Raymark intends to address the unit with respect to the Hazardous and Solid Waste Amendments of 1984 (HSWA) under the Raymark facility license, and not seek separate facility status for this disposal unit.

The facility currently holds an NPDES permit, issued by PA DER, which allows Raymark to discharge non-contact cooling water, solvent recovery system condenser cooling water, and storm water runoff through twelve outfalls to Chickie's Creek.

The facility has also been issued twenty-nine Air Quality Operating Permits by the PA DER. Those permits allow Raymark to operate a coal-fired boiler system, volatile organic compound (VOC) emission control equipment, and an asbestos dust collection system. The VOC emission control equipment includes carbon absorption units and catalytic converter incinerations units. The asbestos dust collection units collect airborne particulate matter containing asbestos and/or lead generated from the grinding and grooving of brake linings, clutch facings etc.¹⁰ The collection system wets the dust with water to stabilize the dust (minimizing airborne particulates) and prepare it for transportation to the onsite landfill. The asbestos/lead dust collection system is further described in Section 5.

SECTION 4

ENFORCEMENT HISTORY

Only one enforcement action appeared in the PA DER and EPA Region III regulatory files for the Raymark facility. A Notice of Deficiency and Notice of Violation dated June 13, 1985 was issued by EPA Region III, Hazardous Waste Management Division, to Raymark for failure to submit a complete Part B Application.¹¹

PA DER and/or EPA Region III conducted at least six RCRA compliance inspections of the facility between 1981 and 1985 in which Raymark was found to be in non-compliance with numerous storage and landfiling regulations. Inspectors noted mis-labeled and leaking drums, unauthorized shipments of wastes to offsite disposal facilities, and improper accumulation of water in the active hazardous waste landfill.

SECTION 5

SOLID WASTE MANAGEMENT UNITS

In March, 1986, GCA conducted a Preliminary Review (PR) of EPA Region III and PA DER regulatory files to identify past and/or presently operating Solid Waste Management Units (SWMUs) at Raymark Industries, Incorporated. On May 7, 1986 GCA and EPA Region III personnel participated in a Visual Site Inspection (VSI) of the site with Raymark officials. The purpose of the VSI was to confirm the existence of previously identified SWMUs, assess the validity and completeness of background and SWMU-related information compiled in the PR, and identify any additional SWMUs not identified in file records.

As a result of the PR and VSI efforts, GCA has identified nine past and/or presently operating SWMUs at the Raymark facility. The nine SWMUs are:

- (1) Current Hazardous Waste Landfill
- (2) Former Hazardous Waste Landfill
- (3) Landfill/Waste Pit
- (4) North Hazel Street Quarry
- (5) Current Drum Storage Area
- (6)-(8) Hazardous Waste Drum Holding Areas
- (9) Asbestos/Lead Slurry Transfer Stations

SWMU locations are illustrated in Figure 2. A detailed description of each of the SWMUs listed above is presented in Table 2. The information included in Table 2 regarding unit design and construction, waste types and

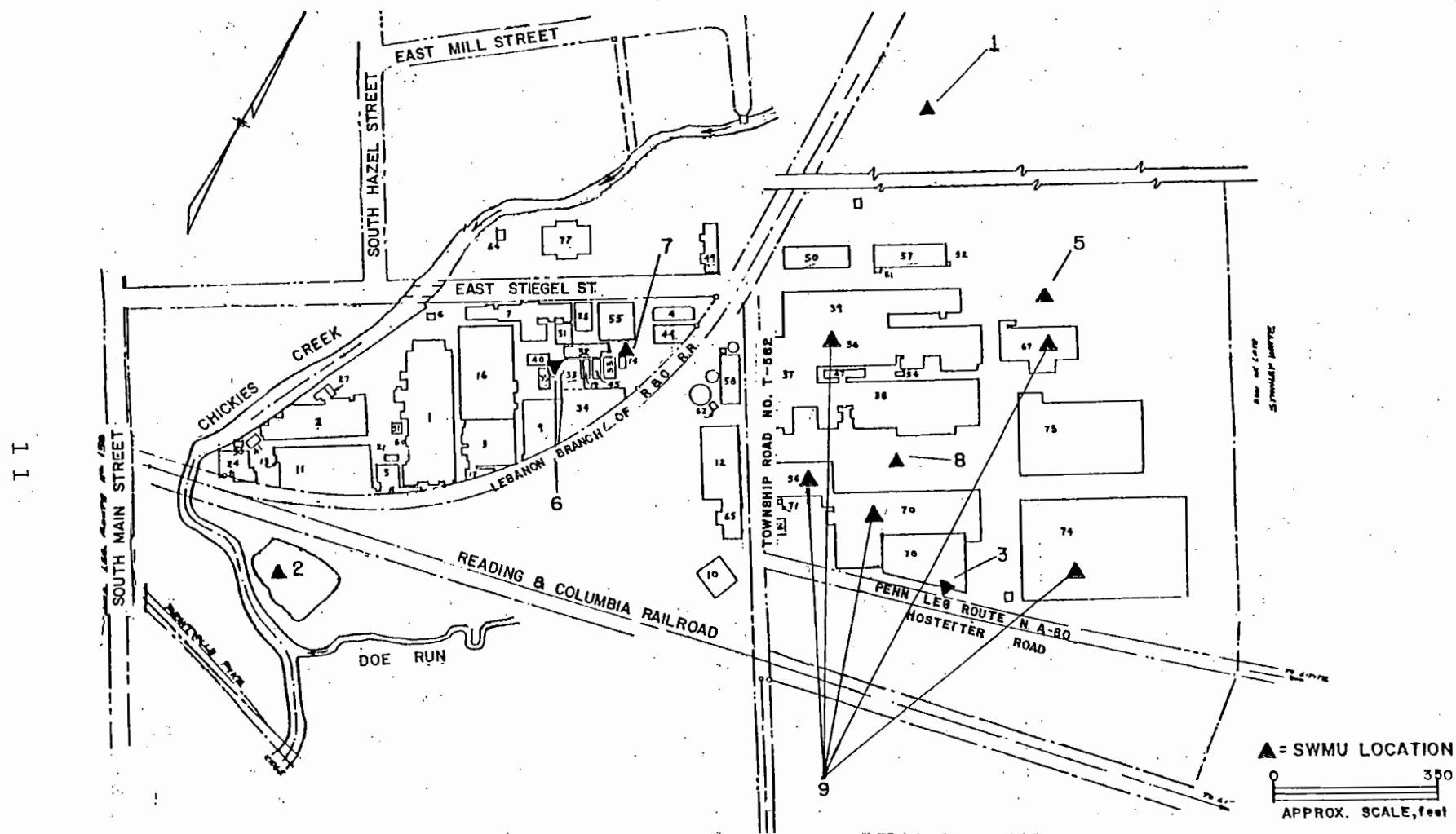


Figure 2. Solid waste management unit location map, Raymark Industries, Inc.

management practices, and known/suspected releases of hazardous wastes from a particular unit was compiled from referenced sources reviewed during the PR and from observations made by GCA and discussions with Raymark officials during the VSI.

A detailed VSI report, including photographs of several of the SWMUs, is included as Appendix A of this Report.

TABLE 2. SOLID WASTE MANAGEMENT UNITS AT RAYMARK INDUSTRIES, INCORPORATED

SWMU(1): Current Hazardous Waste Landfill ¹²

Description: An unlined earthen landfill located in the northeastern portion of the plant. The landfill operates under interim status. The waste design capacity of the landfill is approximately 43 acre-feet. The landfill includes an active portion which currently receives wastes and an inactive portion which is covered with a finished asphalt. In addition to not being equipped with a liner system, the current design of the landfill does not include a leachate collection system.

Status: Active

Management

Description: The Hazardous Waste Landfill exclusively receives all of the estimated 9,663 tons of D008 waste annually generated at the facility. The D008 waste in the landfill is a slurry of asbestos, water, and dust laden with EP toxic levels of lead. The waste is primarily generated by the grooving, grinding, and drilling of clutch linings and brake facings. The dust produced during these machining operations is captured in a dust collection system and then mixed with water to eliminate airborne releases of asbestos. The waste slurry is hauled to the active portion of the landfill by means of a dumpster truck and deposited into one of three unlined trenches, each approximately 10 feet by 50 feet by 20 feet in size.

(continued)

TABLE 2 (continued)

Since 1977, Raymark has taken steps to reduce water infiltration and control storm water run-on/run-off. In 1977 a five-acre portion of the landfill was graded and covered with eight inches of stone and a one inch top cover of asphalt. Six inch asphalt curbing and a storm water sewer system was installed to direct storm water away from the landfill. A complete elevated dike was later added to improve drainage control.

A network of ground water monitoring wells is in existence at the facility. Since 1983, Raymark has, on a quarterly basis, analyzed water samples from five existing wells and submitted the results to PA DER. In 1983-84, a RCRA ground water quality assessment and abatement program for the site was approved by PA DER and implemented by BCM Eastern Inc. on behalf of Raymark.¹³

Waste Types: Solid waste containing asbestos and EP toxic levels of lead (D008).

(continued)

TABLE 2 (continued)

Known

Releases: Landfill contaminants (phenols, lead) have been detected in low levels in ground water samples taken from onsite wells. In addition, downgradient monitoring wells have shown elevated levels of sulfate (a ground water quality parameter) and bicarbonate, indicating an increase in dissolved solids content over background levels. ¹⁴

Suspected

Releases: Potential to soil, ground water, and surface water.

(continued)

TABLE 2 (continued)

SWMU(2): Former Hazardous Waste Landfill ¹⁵

Description: A 450 foot by 260 foot unlined landfill located at the junction of Chickie's Creek and Doe Run tributary at the southwest corner of the plant.

Status: Inactive; operated between 1935 and 1972.

Management

Description: 700,000 cubic feet of asbestos and D008 wastes were disposed of in this unlined landfill. The unit was covered with soil and planted with crown vetch when operation ceased. No other information on management practices or closure were present in the PA DER and EPA files or available from the owner/operator. No environmental analyses of possible contamination from this unit have been conducted.

Waste Types: D008 waste and asbestos.

Known

Releases: None identified

Suspected

Releases: The apparent lack of engineering controls (i.e. liners and surface drainage controls) increases the likelihood that this unit poses a threat to ground water, soil and surface water.

(continued)

TABLE 2 (continued)

SWMU(3): Landfill/Waste Pit ¹⁶

Description: A 300 square foot unlined earthen pit between Building 70 and Hostetter Road once used to store D008 and asbestos wastes.

Status: Inactive, operated from 1962 to 1973.

Management

Description: Approximately 300 cubic feet of D008 and asbestos wastes were landfilled in this unit. After 1973, the material was reportedly excavated and deposited in the active landfill. The unit was backfilled and covered with grass. No environmental analyses of possible contamination from this unit have been conducted. No other information on the management or closure of this unit was available in the files or from Raymark. No environmental analyses of possible contamination from this unit have been conducted.

Waste Types: D008 wastes and asbestos.

Known

Releases: None identified

Suspected

Releases: Due to the lack of engineering controls (i.e. liner and drainage controls) there is a potential to soil, ground water, and surface water.

(continued)

TABLE 2 (continued)

=====

SWMU(4): North Hazel Street Quarry

Description: An off site quarry in which hazardous wastes were disposed of by Raymark between 1968 to 1973. The waste unit, located in the northeast section of Manheim, covers approximately three acres of land and contains approximately 20,000 cubic feet of waste. According to Raymark, private residential housing has been built over parts of this SWMU. 17

Status: Inactive, operated from 1968 to 1973.

Management

Description: When operations at the unit ceased, the SWMU was covered with soil. No other management or closure details were available in the PA DER and EPA files or from Raymark. No environmental analyses have been conducted on this unit.

Waste Types: D008 waste and asbestos.

Known

Releases: None identified.

Suspected

Releases: Potential to groundwater and surface water.

=====

(continued)

TABLE 2 (continued)

SWMU(5)

Current Drum Storage Area 18,19

Description: A three-sided roofed and walled drum storage shed located north of Building 67. The 500 square-foot poured concrete floor is sloped to direct spilled liquids into a trough along the rear of the shed. The shed was built in 1981 in the same area in which drummed wastes were historically stored without protective spill containment measures in place.

Status: Active.

Management

Description: Waste organic solvents and ignitable wastes are placed in sealed 55-gallon drums and stored in this area pending shipment to an off site disposal facility.

In 1981, Raymark received interim status as a hazardous waste storage facility and, in 1983, sought a Part B storage permit. However, in June 1985, Raymark withdrew their request for a storage permit. As a result, drummed wastes are currently stored on site less than 90 days.

(continued)

TABLE 2 (continued)

Waste Types: Waste organic solvents (F001, F003, F005) and ignitable wastes (D001). F001 wastes are not currently being generated at the facility, but were in considerable quantity (10,000 pounds/year) up until 1982-1983. F003 and F005 wastes are generated through the cleaning of various pieces of manufacturing equipment. D001 waste is generated from off-grade treating materials that are flammable. The names of specific compounds within each general waste code were not available in the files.

Known

Releases: A March 3, 1984 PA DER RCRA inspection noted drums containing D001 waste had overflowed and spilled waste onto the ground. During a July 23, 1985 EPA/PA DER joint RCRA inspection, a small spill area, distressed vegetation, and elevated organic vapor analyzer (HNU) readings were observed between the storage area and Building 67.

Suspected

Releases: Potential to ground water, soil, surface water prior to the construction of the shed in 1981.

(continued)

TABLE 2 (continued)

SWMUs (6)-(8) Hazardous Waste Drum Holding Area 20,21

Description: Three onsite hazardous waste drum holding areas identified on the Raymark Part A Application Facility Drawing, but not included in Raymark's RSI #3 response. The units are all currently equipped with an asphalt floor and a six inch asphalt berm to contain spills. None of the units provide overhead shelter from precipitation events. The dates of construction of these units were not available. The locations and size of each of the units is as follows:

- (6) East of Building 35, 66 square feet
- (7) South of Building 55, 36 square feet
- (8) South of Building 36, 630 square feet

Status: SWMU(6) is the only one of the three units not in active use by Raymark. All three of the units have been used since at least the early 1970s.

Management

Description: These units are being or have been used as temporary holding areas for drummed hazardous wastes prior to the drums being transported to SWMU(5), the Current Drum Storage Area.

(continued)

TABLE 2 (continued)

Waste Types: One or more of the following: F001, F003, F005, D001, D008.

Known

Releases: None identified.

Suspected

Releases: Potential to soil, groundwater, surface water and air.

(continued)

TABLE 2 (continued)

=====

SWMU(9): Asbestos/Lead Slurry Transfer Stations 22

Description: Six individual dumpster holding areas used to temporarily store the slurry effluent from the asbestos/lead dust collection system. The six units are located in Buildings 36, 56, 67, 70 (two units) and 74. All of the dumpsters are set on concrete pads, but only three of the units are equipped with overhead shelters.

Status: Active

Management

Description: Particulate matter containing lead and asbestos which is generated in Raymark's manufacturing processes is collected in an exhaust system and wetted with water to reduce airborne emissions. The slurry is automatically conveyed into metal dumpster units. The dumpsters are transported to SWMU(1) on a regular basis (daily or more often depending on production schedules), and the slurry is dumped into the working landfill cells.

Waste Types: D008 waste and asbestos.

=====

(continued)

TABLE 2 (continued)

Known

Releases: GCA/EPA personnel noted spillage of the waste slurry at many of the units during the May 7, 1986 site inspection.

Suspected

Releases: Potential to surface water. Some of the units are located close to storm water catch basins and there are few engineering controls (berms, sloped floors, etc.) to contain spilled waste slurry.

SECTION 6

POLLUTANT DISPERSAL/RELEASE PATHWAYS

Pollutant dispersal pathways at the Raymark site consist of ground water, surface water and air. Figure 1 presents the general topography of the Raymark site and surrounding area. The pollutant dispersal pathways are discussed below.

SURFACE WATER

Chickie's Creek flows from north to south through the site, forming the western border of the plant. Doe Run, a tributary to Chickie's Creek, flows along the southwest portion of the property. Surface drainage from precipitation events is collected in a storm water collection system and is discharged to Chickie's Creek. Chickie's Creek also receives non-contact cooling waters from various plant processes under Raymark's NPDES permit. According to Pennsylvania Water Quality Standards ²³, Chickie's Creek is classified as suitable for warm water fishes. No classification for drinking water and recreational use was available in the files.

GROUND WATER ²⁴

The Raymark plant site and surrounding area is underlain by carbonate bedrock. Bedrock in the vicinity of Manheim and the Raymark plant is extensively folded and faulted. Two geologic formations of the Beekmantown Group, the Stonehedge limestone and the Epler limestone and dolomite, underlie the site. Depth to bedrock, as identified in Raymark's plant water supply and disposal area monitoring wells, ranges from 6 to 25 feet

below land surface.

Ground water in the vicinity of the active Raymark landfill, SWMU(1), occurs in two hydrogeologic regimes. Ground water is contained within the alluvial deposits along the Chickie's Creek floodplain and within the underlying carbonate bedrock. Ground water within both regimes occurs under water table conditions. Water level measurements taken in landfill monitoring wells indicate that the two regimes are also hydrogeologically connected. In measurements taken in October and November, 1983, ground water was encountered in the Raymark monitoring wells at depths ranging from 4.7 to 16.5 feet below land surface. Ground water flow direction beneath the current landfill is to the south-southeast.

Raymark operates three high-yield water supply wells located approximately 500 feet south of the current landfill. The wells supply water for the plant's industrial process and cooling water needs, and are capable of pumping a collective total of 990 gallons per minute. Pumping of the plant supply wells presumably has lowered the water table in the vicinity of the landfill and induced ground water flow towards the pumping wells. As a result of this ground water pumping, Chickie's Creek, in the vicinity of the landfill, is an effluent stream discharging water to the local ground water system.

The closest public water supply well to the Raymark facility is the Manheim Borough's reserve supply well located 6,000 feet southwest of the site at the confluence of Chickie's Creek and Rife's Run. The nearest private water supply wells are located 3,000 feet northeast and 3,000 feet southeast of the site. None of these wells are thought to be affected by ground water conditions at Raymark, but no water quality testing data to support that assumption were in evidence in the files.

AIR 25

A wind rose illustrating the frequency of wind direction during the period from 1964 - 1973 as measured in Harrisburg, PA (the closest STAR location, approximately 30 miles northwest of the site) is presented in Figure 3. Winds are predominantly from the west and west-northwest.

STAR STATION 0883

SECTOR	(FREQUENCY)
N	6.090E-02
NNE	1.648E-02
NE	1.215E-02
ENE	2.023E-02
E	9.608E-02
ESE	7.821E-02
SE	5.669E-02
SSE	4.180E-02
S	5.825E-02
SSW	2.931E-02
SW	3.730E-02
WSW	6.871E-02
W	2.055E-01
WNW	1.062E-01
NW	6.865E-02
NNW	4.355E-02

PLOT TYPE = WIND DIRECTION ANNUAL 1964-1973

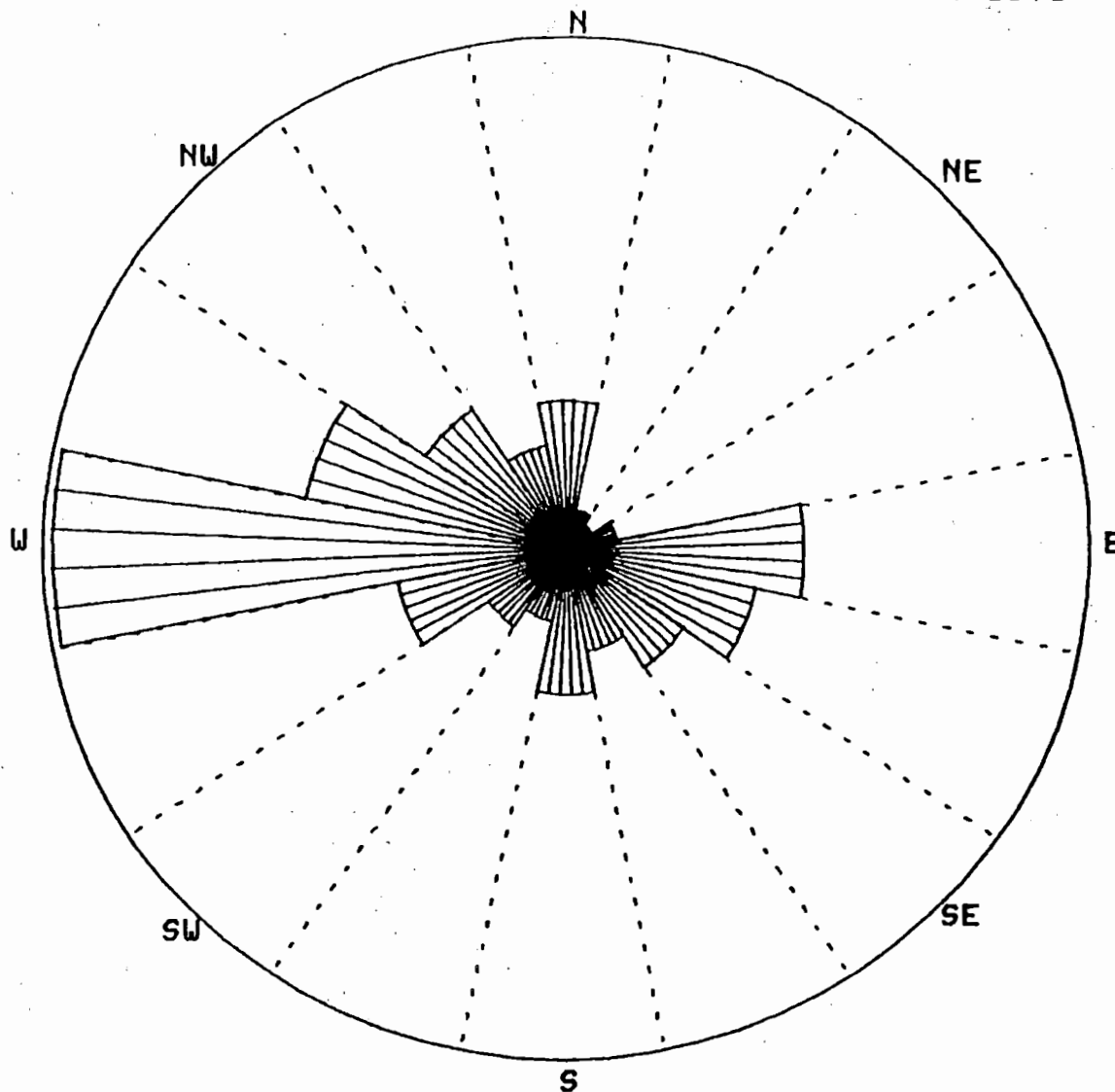


Figure 3. Annual wind rose, Harrisburg/State PA.

SECTION 7

HUMAN/ENVIRONMENTAL RECEPTOR TARGETS

The EPA graphical exposure modeling system provided population for a radius of one and ten miles around the reported latitude and longitude of the Raymark Industries, Inc. Manheim facility.²⁶ As seen in Figure 4, 3821 persons live within a one mile radius of the site, predominantly in the areas west and northwest of the plant. Approximately 185,000 persons live within a ten mile radius of the plant, primarily in the area south-southeast of the site which includes the City of Lancaster. No other information on receptor targets was available in the PA DER or EPA files.

THE PLOT CENTER IS AT:
 LATITUDE 40.1553
 LONGITUDE 76.3853
 Number of rings: 2
 Number of sectors: 16

RADII		POPULATION	
From	To	Within Ring	Cumulative
0.00	1.60	3821	3821
1.60	16.00	180628	184447

Sector	Population
N	1824
NNE	1601
NE	4261
ENE	5263
E	13451
ESE	7681
SE	23112
SSE	69281
S	17679
SSW	10135
SW	3391
WSW	7376
W	1823
WNW	5951
NW	5861
NNW	5957

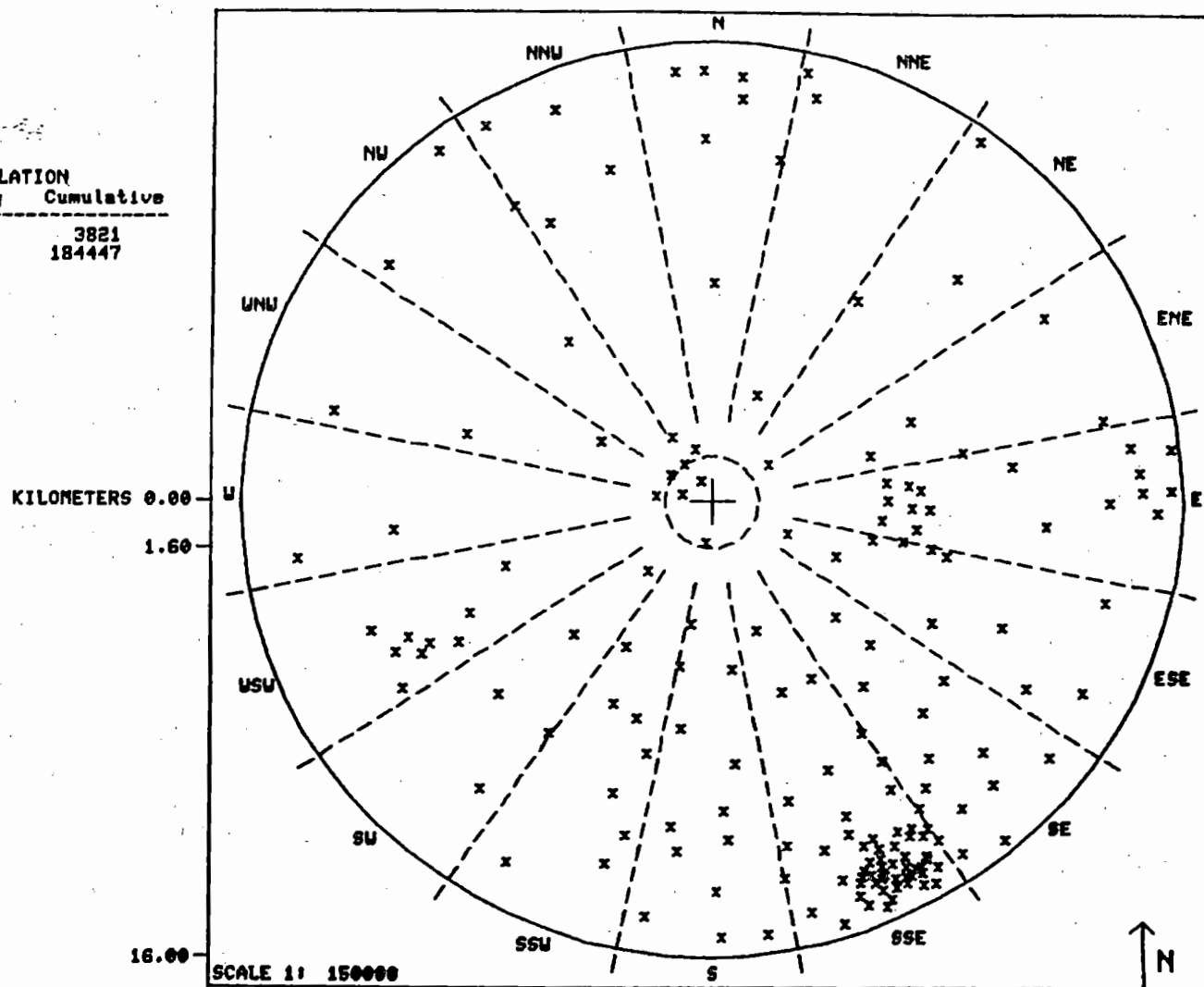


Figure 4. Population distribution within a one mile and ten mile radius of Raymark Industries, Inc.

SECTION 8

CONCLUSIONS

The Raymark Industries, Incorporated facility is located along Chickie's Creek just west of Manheim Borough in Lancaster County, Pennsylvania. The facility manufactures asbestos-based energy absorbing friction materials for use in the automobile industry. Production operations within the facility generate waste organic solvents, ignitable wastes, and lead-bearing wastes which also contain asbestos. Raymark stores the solvents and ignitable wastes in drums onsite pending shipment to offsite treatment/disposal facilities. The lead-bearing hazardous waste has been stored in landfills onsite since 1935. Raymark currently operates one landfill located in the northeastern section of the site.

GCA has identified nine SWMUs at the Raymark site. SWMU locations were previously identified in Figure 2. The nine SWMUs are:

- (1) Current Hazardous Waste Landfill
- (2) Former Hazardous Waste Landfill
- (3) Landfill/Waste Pit
- (4) North Hazel Street Quarry
- (5) Current Drum Storage Area
- (6)-(8) Hazardous Waste Drum Holding Areas
- (9) Asbestos/Lead Slurry Transfer Stations.

SWMUs (1), (2), and (3) are all earthen construction, unlined units which have received lead-bearing solid waste and asbestos. SWMU(1) is the only unit of the three still in active use by Raymark. The waste in SWMU(1) has been shown to be in direct contact with ground water. Recent analytical results of ground water samples taken from the SWMU(1) area have shown elevated levels of sulfate and bicarbonate and the presence of trace levels of landfill contaminants in the ground water.

Little information is known about the construction and operational management history of SWMUs (2) - (4). SWMU(2) is an inactive hazardous waste landfill adjacent to both Chickie's Creek and Doe Run. SWMU(3) is a relatively small D008 and asbestos waste pit adjacent to Hostetter Road. SWMU(4) is an offsite quarry that was filled with D008 waste and asbestos, and then covered with soil. Waste organic solvents and ignitable wastes generated at the facility are drummed and stored in SWMU(5), the Current Drum Storage Area. PA DER inspections of this area have identified numerous waste releases. SWMUs(6) - (8) are hazardous waste drum holding areas located between buildings in the production areas for which little waste history information is available. SWMU(9) includes six holding areas used to store asbestos/lead slurry from the dust collection system prior to disposal in SWMU(1).

Raymark has indicated to GCA/EPA that they are in the process of developing a sampling and analysis program to further investigate ground water, soil, surface water, and air quality contamination resulting from the onsite disposal landfills.²⁷ The plan, which is briefly described in Appendix A of this Report, is scheduled for implementation in 1986.

SECTION 9

RECOMMENDATIONS

Based upon its review of the data compiled in the PR and VSI stages of the Preliminary Assessment, GCA recommends that additional SWMU investigative activities, summarized in Table 3, be performed at the Raymark Industries, Incorporated facility.

GCA recommends that each of the nine identified SWMUs be included in a Site Investigation (SI). GCA is of the opinion that each of the units pose a real/potential hazardous waste release threat (primarily to ground water), but that the existing data do not support the need for a Remedial Investigation or Health Assessment at this time.

The documented presence of trace levels of phenols and lead, and elevated levels of sulfate and bicarbonate in ground water samples collected from monitoring wells located downgradient from SWMU(1) warrants further study of this unit. The focus of the SI for SWMU(1) should be to obtain and assess more recent (1984 through present) ground water monitoring data concerning contaminant concentrations, migration pathways, and potential receptors. Corrective actions for this regulated unit can be taken under the authority of 40 CFR 264, Subpart F.

SWMUs (2), (3) and (4), all inactive, unlined D008 and asbestos disposal landfills, are also recommended for an SI in order to develop a data base to assess their impact on ground water and other environmental media.

SWMU(5) is recommended for an SI to investigate the possibility that hazardous wastes were released into the soil underlying the pavement of the Current Drum Storage Area prior to the construction of the pad in 1981.

TABLE 3. RECOMMENDATIONS FOR ADDITIONAL SWMU INVESTIGATION
AT RAYMARK INDUSTRIES, INCORPORATED.

<u>Investigative Action Needed</u>	<u>SWMU</u>
Initiate Development of Interim Corrective Measures	None
Perform a Remedial Investigation	None
Conduct a Site Investigation	(1) Current Hazardous Waste Landfill (2) Former Hazardous Waste Landfill (3) Landfill/Waste Pit (4) North Hazel Street Quarry (5) Current Drum Storage Area (6)-(8) Hazardous Waste Drum Holding Areas (9) Asbestos/Lead Slurry Transfer Stations
Conduct a Health Assessment	None
No Further Action	None
Refer Releases to Other Environmental Program Offices for Further Assessment	None

Similarly, because of uncertainty as to the dates of construction of the asphalt barriers and the possibility of prior soil contamination, SWMUs(6), (7), and (8) are included for evaluation in the SI. Finally, SWMU(9) is recommended for inclusion in an SI to further assess the adequacy of spill control measures and the impact that surface water drainage from these areas has on the lead content and overall quality of storm water runoff draining into Chickie's Creek.

GCA recommends that EPA Region III initiate a request under RCRA Section 3007 to require Raymark to supply the Agency with any and all existing documentation regarding environmental media sampling and analyses performed during past hazardous waste identification and contaminant migration studies of SWMUs and environmental pathways/receptors. This request is further outlined in Appendix B of this Report. Such information is useful in helping to fill data gaps with existing data and define the focus of further investigatory activities at a particular SWMU. If no such documentation exists, or documentation provided by Raymark proves inconclusive, GCA recommends that EPA conduct a Sampling Visit (SV), the focus of which would be to conduct the minimal amount of sampling and analysis for each unit to determine if the unit is presently experiencing or has previously experienced a hazardous waste release and/or to characterize the extent to which contamination has migrated from the unit. This is necessary to support the development of permit conditions under the authority of Section 3004(u) or an enforcement order under the authority of Section 3008(h) to compel further remedial investigation. The details of the SV focus are presented on a SWMU-specific basis in Appendix C of this Report.

The data obtained from Raymark and the SV should provide the additional information necessary to reevaluate the need for an focus of Corrective Actions at the facility. Those actions could include a Remedial Investigation of certain SWMUs and the development and implementation of Remedial Measures to contain the source and migration of hazardous wastes and mitigate possible human/environmental health and welfare damage associated with them.

SECTION 10

REFERENCES

1. Raybestos-Manhattan, Incorporated. RCRA Part A Application, I.D. No. PA D003015328, November 19, 1980.
2. Raymark Industries Incorporated. RCRA Part B Application (Revised), I.D. No. PA D003015328, September 6, 1985. Section 1.
3. Raymark Industries Incorporated. RCRA Part B Application (Revised), I.D. No. PA D003015328, September 6, 1985. Section 1.
4. U.S. Environmental Protection Agency. Conditions of Operation During Interim Status, Raybestos-Manhattan Incorporated, I.D. No. PA D003015328, August 5, 1981.
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7. Benven, Robert G., Pennsylvania Department of Environmental Resources, Bureau of Solid Waste Management. Correspondence to Raymark Corporation Regarding Raymark Part B Application, March 1, 1985.

8. Weller, Dennis A., Raymark Industries Incorporated. Reauthorization Statutory Interpretation (RSI #3) response to U.S. EPA Region III, April 18, 1985. 2 pp.
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14. BCM Eastern, Incorporated. Groundwater Quality Assessment and Abatement Program for Raymark Industries, Incorporated. January 1984. p. 1-2.
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16. Weller, Dennis A., Raymark Industries Incorporated. Reauthorization Statutory Interpretation (RSI #3) response to U.S. EPA Region III, April 18, 1985. 2 pp.

17. Weller, Dennis A., Raymark Industries Incorporated, Manheim PA.
GCA/EPA Visual Site Inspection, May 7, 1986.
18. Weller, Dennis A., Raymark Industries Incorporated. Reauthorization
Statutory Interpretation (RSI #3) response to U.S. EPA Region
III, April 18, 1985. 2 pp.
19. Weller, Dennis A., Raymark Industries Incorporated, Manheim PA.
GCA/EPA Visual Site Inspection, May 7, 1986.
20. Weller, Dennis A., Raymark Industries Incorporated, Manheim PA.
GCA/EPA Visual Site Inspection, May 7, 1986.
21. Raybestos-Manhattan, Incorporated. RCRA Part A Application,
I.D. No. PA D003015328, November 19, 1980.
22. Weller, Dennis A., Raymark Industries Incorporated, Manheim PA.
GCA/EPA Visual Site Inspection, May 7, 1986.
23. Environment Reporter, Bureau of National Affairs. Pennsylvania Water
Quality Standards, Pennsylvania Code, Title 25 - Environmental
Resources, Chapter 93 (Revised May 13, 1985). August 8, 1985.
24. BCM Eastern, Incorporated. Groundwater Quality Assessment and
Abatement Program for Raymark Industries, Incorporated. January
1984.
25. EPA Graphical Exposure Modeling System, provided by Ms. Daryl Kaufman,
EPA Headquarters, Washington, D.C., April 1986.
26. EPA Graphical Exposure Modeling System, provided by Ms. Daryl Kaufman,
EPA Headquarters, Washington, D.C., April 1986.
27. Weller, Dennis A., Raymark Industries Incorporated, Manheim PA.
GCA/EPA Visual Site Inspection, May 7, 1986.

APPENDICES

APPENDIX A

GCA/EPA REGION III VISUAL SITE INSPECTION, MAY 7, 1986

On May 7, 1986, personnel from GCA Technology Division, Incorporated and U.S. EPA Region III met with representatives of Raymark Industries, Incorporated to conduct a Visual Site Inspection of the Raymark manufacturing facility in Manheim Borough, Pennsylvania. Those present at the VSI included:

GCA: Paul A. Ahearn, Regulatory Engineer
GCA Technology Division, Incorporated
213 Burlington Road
Bedford, Massachusetts 01730
(617) 275-5444

EPA: Joseph S. Arena, Environmental Scientist
U.S. Environmental Protection Agency, Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107
(215) 597-3180

Raymark: Dennis A. Weller, Manager-Facilities Engineering
George R. Houser, Manager-Plant Engineering

Raymark Industries, Incorporated
123 E. Stiegel Street
Manheim, Pennsylvania 17545
(717) 665-2211

The purpose of the VSI was to:

- (1) Familiarize GCA/EPA with the physical layout of the site;
- (2) Review Preliminary Assessment data compiled by GCA during a March 1986 Preliminary Review (PR) of U.S.EPA Region III and Pennsylvania Department of Environmental Resources (PA DER) regulatory files with Raymark officials and revise/update data accordingly;
- (3) Inspect all past or presently operating Solid Waste Management Units (SWMUs) identified by GCA during the March 1986 PR; and
- (4) Identify and inspect all real and/or potential SWMUs not previously identified.

The VSI began with a brief history of the facility by Mr. Weller and a discussion of Raymark's RCRA Part B Permit Application status. Mr. Weller informed GCA/EPA that Raymark anticipates receiving PA DER's formal permit denial notification by June 15, 1986. Following that, Raymark intends to develop a Closure/Post-Closure (C/PC) plan for the current landfill and well pending PA DER approval, cease operation of the landfill and begin C/PC work by March 31, 1987. Raymark expects that by June 30, 1987, the

approved C/PC plan will be fully operational. Raymark is in the process of developing and testing new friction-absorbing materials and manufacturing designs in order to reduce (or eliminate) the use of lead and asbestos in their products, and the quantity of D008 and asbestos waste produced.

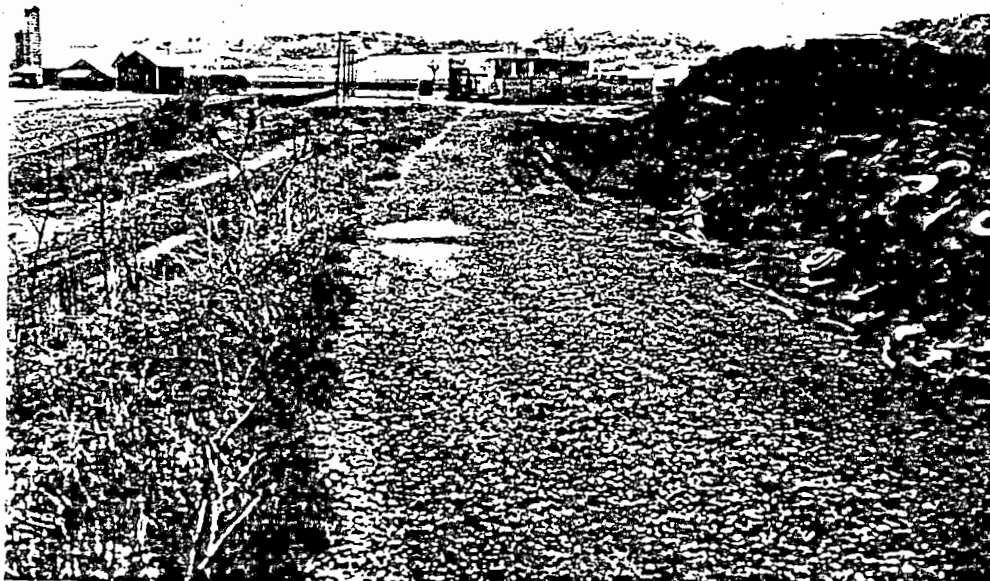
Mr. Weller also outlined a new investigative program being developed by Raymark and their consulting engineers to further assess ground water, surface water, soil, and air quality contamination at the site. The program will, according to Weller, key on identifying the presence of ground water contamination from the three unlined disposal landfill areas onsite, SWMUs(1), (2), and (3). Soil samples to detect volatile organics and priority pollutants are also planned. Air quality will be assessed using organic vapor analyzer field equipment and particulate collection methods. Raymark also intends to study surface water quality and perform a site biota study. The full plan is still in its developmental stages, with implementation expected sometime in 1986.

Following the one-hour office discussion, Mr. Weller and Mr. Houser led Mr. Arena and Mr. Ahearn through an inspection of the hazardous waste storage and disposal areas that have been used by Raymark. Mr. Ahearn carried with him a copy of GCA's Draft Preliminary Assessment and made detailed notes in it to fill critical data gaps and/or update information concerning a unit's physical appearance and construction, management operations, waste types, and waste release history. To aid in the documentation of units, photographs of SWMUs were taken and the pictures' locations and subjects were noted in a field log.

Observations made by GCA/EPA and other information made available during the VSI have been incorporated into the text of GCA's Draft Final Report to the EPA.



SWMU(1): Current Landfill, Active Portion, Front View



SWMU(1): Current Landfill, Rear View



SWMU(1): Asbestos/Lead Slurry



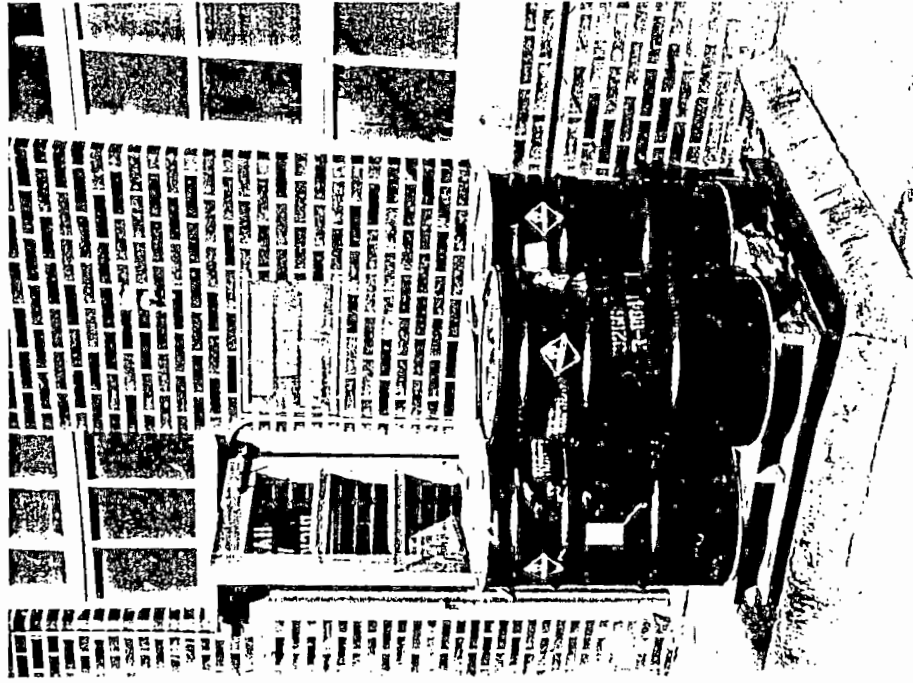
SWMU(1): Current Hazardous Waste Landfill - Inactive Portion



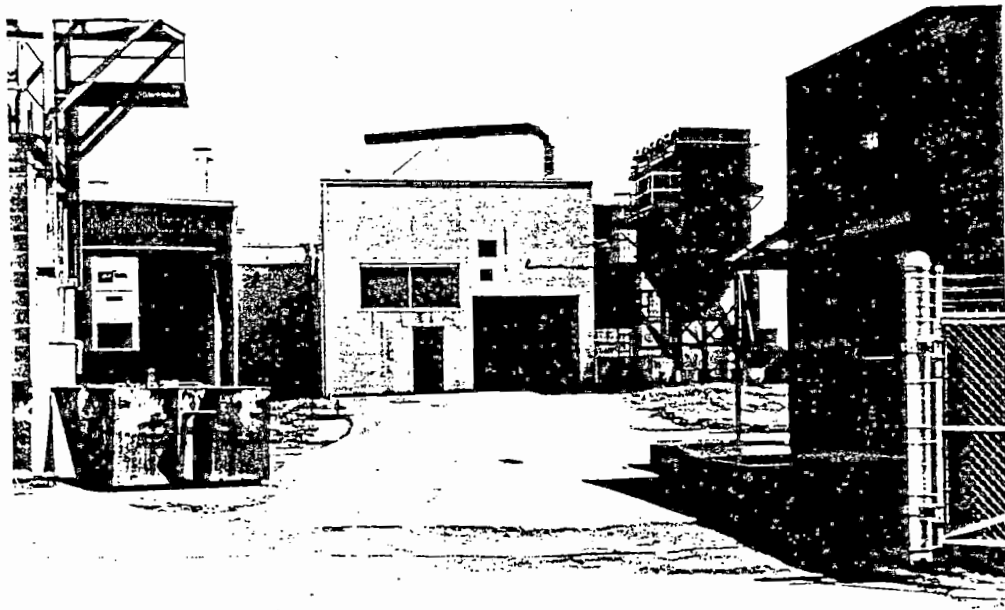
SWMU(2): Former Hazardous Waste Landfill



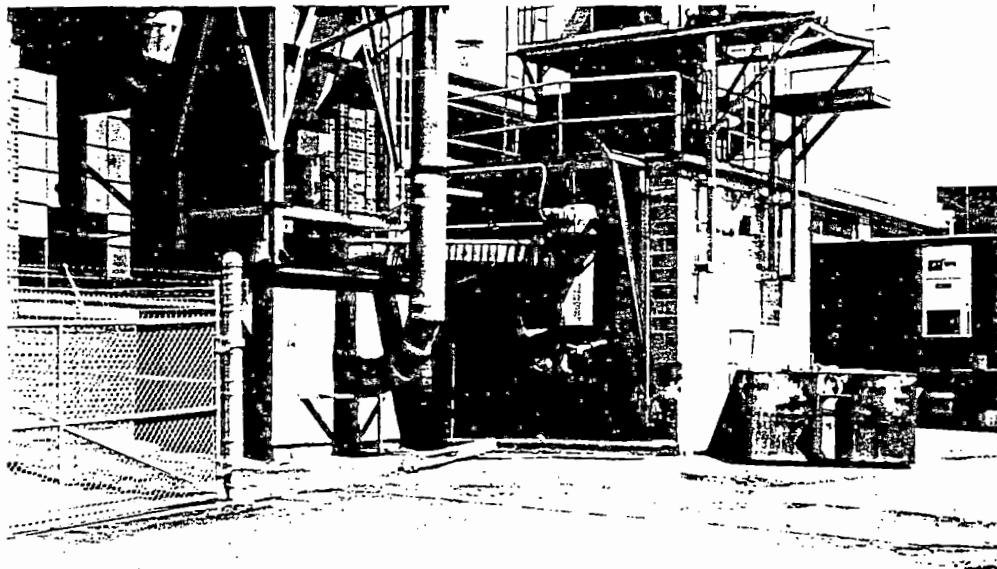
Top: SWMU(5): Current drum storage area - collection trough.
 Bottom: SWMU(5): Current drum storage area.



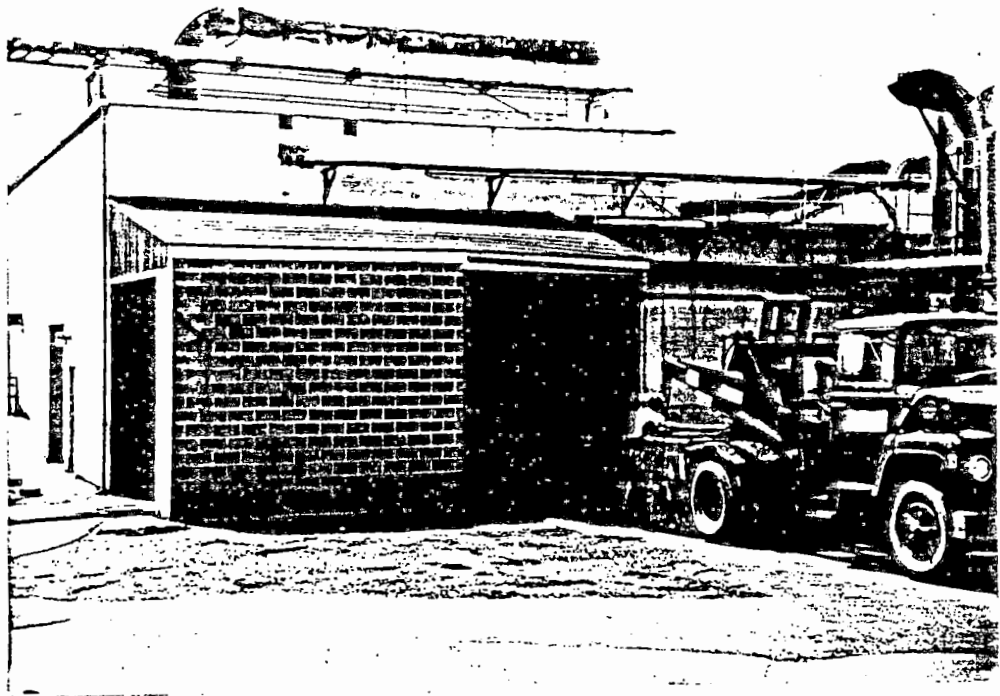
SWMU(7): Hazardous Waste Drum Holding Area



SWMU(9): Asbestos/Lead Slurry Transfer Station - Covered



SWMU(9): Asbestos/Lead Slurry Transfer Station - Uncovered



Top: SWMU(9): Asbestos/lead slurry transfer station - covered.
 Bottom: SWMU(9): Asbestos/lead slurry discharge into
 metal dumpster units.

APPENDIX B

ADDITIONAL INFORMATION REQUESTS

Additional information is necessary to assess the need for Remedial Investigation at Raymark Industries, Inc. under the authority of Sections 3004(u) and/or 3008(h) of HSWA of 1984. GCA recommends that Raymark be requested to provide the following information, if it exists:

A. GROUND WATER MONITORING DATA

In order to accurately and fully characterize ground water conditions at the site, EPA should request copies of the most recent ground water monitoring results and any other related hydrogeological information.

B. SWMU-SPECIFIC DATA

- o SWMU(1) - Quarterly results of RCRA ground water monitoring program since 1984 and specific details of the planned 1986 assessment.
- o SWMUs(2),(3) and (4) - Details of the planned 1986 assessment and results from any waste characterization studies performed to identify the landfilled materials will aid in focusing the analytical needs of the SV effort.

- o SWMUs(5), (6), (7), (8) and (9) - Documentation providing information concerning historical waste management practices in these areas, dates of construction of containment pads, barriers, etc., and analytical results of soil and/or ground water samples taken in conjunction with construction of or spills within these units.

APPENDIX C

SAMPLING VISIT APPROACH

A site Sampling Visit (SV) may be necessary if additional information is unobtainable from Raymark, or if that information is determined by EPA Region III to be incomplete or inaccurate. The SV approach recommended by GCA was developed by reviewing the extensive SWMU-specific information presented in Table 2 of this report. Each SWMU was reviewed to determine the appropriate media to be sampled to investigate the known/potential releases of particular hazardous wastes and/or constituents. The need for waste sampling was also reviewed. Although the specific sampling details related to a particular SWMU will vary according to the supplemental information provided by Raymark and the actual scope of the planned 1986 assessment, GCA anticipates that EPA Region III will apply this approach in part or in full as necessary to support Corrective Action Program implementation under RCRA Sections 3008(h) and 3004(u) and/or other RCRA authorities.

Based on the VSI and PR, GCA does not recommend air quality sampling at the site at this time due to the lack of evidence suggesting the occurrence of on-going releases to the atmosphere.

Table C-1 presents GCA's recommendations for the Sampling Visit focus on a SWMU-specific basis.

TABLE C-1. SAMPLING VISIT RECOMMENDED APPROACH

SWMU(1): Current Hazardous Waste Landfill

Media and Recommended Analyses:

None at present

Comments:

Recommend full review of this unit pending review of recent ground water monitoring data and the scope of work/analytical results of Raymark's 1986 assessment.

SWMU(2),(3), and (4): Former Hazardous Waste Landfill
Landfill/Waste Pit
North Hazel Street Quarry

Media and Recommended Analyses:

Soil/Waste - EP Toxicity and VOCs.

Ground water - Priority pollutants and drinking water quality parameters (pH, dissolved solids).

Comments:

Need to fully characterize the nature of the landfilled and begin developing a data base for each unit in terms of the extent of contamination, local ground water flow, etc.

TABLE C-1 (continued)

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SWMU(5), (6), (7), and (8): Drum Storage/Holding Area

Media and Recommended Analyses:

Soil - VOCs and halogenated organics.

Comments:

Need to confirm the non-existence of hazardous constituents in the soil below the containment pads in these areas.

SWMU(9): Asbestos/Lead Slurry Transfer Stations

Media and Recommended Analyses:

Water - Drinking water metals, water quality parameters, and asbestos.

Comments:

Need to establish whether these units are or possibly could contribute to contamination of surface water drainage. Storm basins near each unit and their outfalls to Chickie's Creek are recommended sample locations.

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